Chapter 1: Introduction to Project Management

Information Technology Project Management, Ninth Edition

Note: See the text itself for full citations

Learning Objectives (1 of 2)

- Articulate **the growing need for better project management**, especially for information technology (IT) projects
- **Explain what a project is**, provide examples of IT projects, list various attributes of projects, and describe constraints of project management
- **Define project management and discuss key elements** of the project management framework, including project stakeholders, the project management knowledge areas, common tools and techniques, and project success

Learning Objectives (2 of 2)

- **Discuss the relationship between project, program, and portfolio management** and the contributions each makes to enterprise success
- **Summarize the role of project managers** by describing what they do, what skills they need, the talent triangle, and career opportunities for IT project managers
- **Recall key aspects of the project management profession**, including important components of its history, the role of professional organizations like the Project Management Institute (PMI), the importance of certification and ethics, and the advancement of project management software

Introduction (1 of 3)

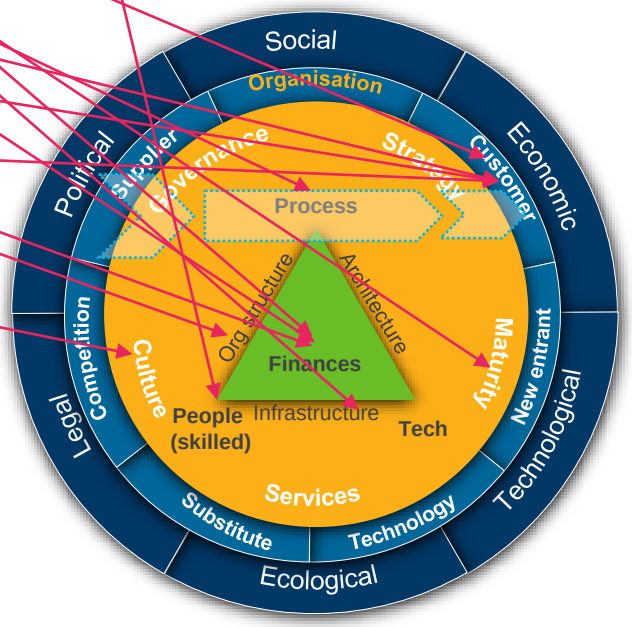
- Many people and organizations today have a new or renewed interest in project management
- Worldwide IT spending was $3.5 trillion in 2017, a 2.4 percent increase from 2016 spending
- **The Project Management Institute reported that the number of jobs reached almost 66 million in 2017**. By 2027, employers will need 87.7 million individuals working in project management–oriented roles

Introduction (2 of 3)

- In 2017, the **average annual salary** (without bonuses) for someone in the project management profession was **$112,000 in the U.S. and $130,866 in Switzerland**
- The top skills employers look for in new college graduates are all related to project management: team-work, problem-solving, and verbal communications
- Organizations **waste $97 million for every $1 billion spent** on projects, according to PMI's Pulse of the Profession® report

Introduction (3 of 3)

- **Advantages** of Using Formal Project Management:
  - Better control of financial, physical, and human resources
  - Improved customer relations
  - Shorter development times
  - Lower costs and improved productivity
  - Higher quality and increased reliability
  - Higher profit margins
  - Better internal coordination
  - Positive impact on meeting strategic goals
  - Higher worker morale

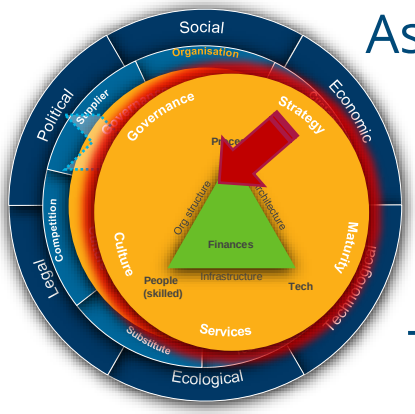


What Went Wrong?

- IT Projects have a **terrible track record**, as described in the What Went Wrong?
- A 1995 Standish Group study (CHAOS) found that **only 16.2% of IT projects were successful** in meeting **scope, time, and cost goals**; over 31% of IT projects were canceled before completion
- A PricewaterhouseCoopers study found that **over half of all projects fail** and only 2.5% of corporations consistently meet their targets for scope, time, and cost goals for all types of project

What Is a Project?

- A project is "**a temporary endeavor undertaken to create a unique product, service, or result**" (PMBOK® Guide, Sixth Edition, 2017)
- **Operations is work done** to sustain the business
- **Projects end when their objectives have been reached (**or the project has been terminated)



As Is

To Be

Examples of IT Projects (1 of 2)

- A team of students creates a smartphone application and sells it online
- A company develops a driverless car
- A government group develops a system to track child immunizations
- A global bank acquires other financial institutions and needs to consolidate systems and procedures

Examples of IT Projects (2 of 2)

- Top Strategic Technologies for 2018 (Gartner)
  - Artificial Intelligence (AI) Foundation
  - Intelligent Things
  - Cloud to the Edge
  - Immersive Experience

Project Attributes

- **A project**
  - **has a unique purpose**
  - **is temporary**
  - **drives change** and enable value creation
  - **is developed** using progressive elaboration
  - **requires resources**, often from various areas
  - should have a primary **customer** or **sponsor**
    - The project sponsor usually provides the direction and funding for the project
  - involves **uncertainty**
- **Project managers work with project sponsors, team, and other people involved in a project to achieve project goals**

Project Constraints

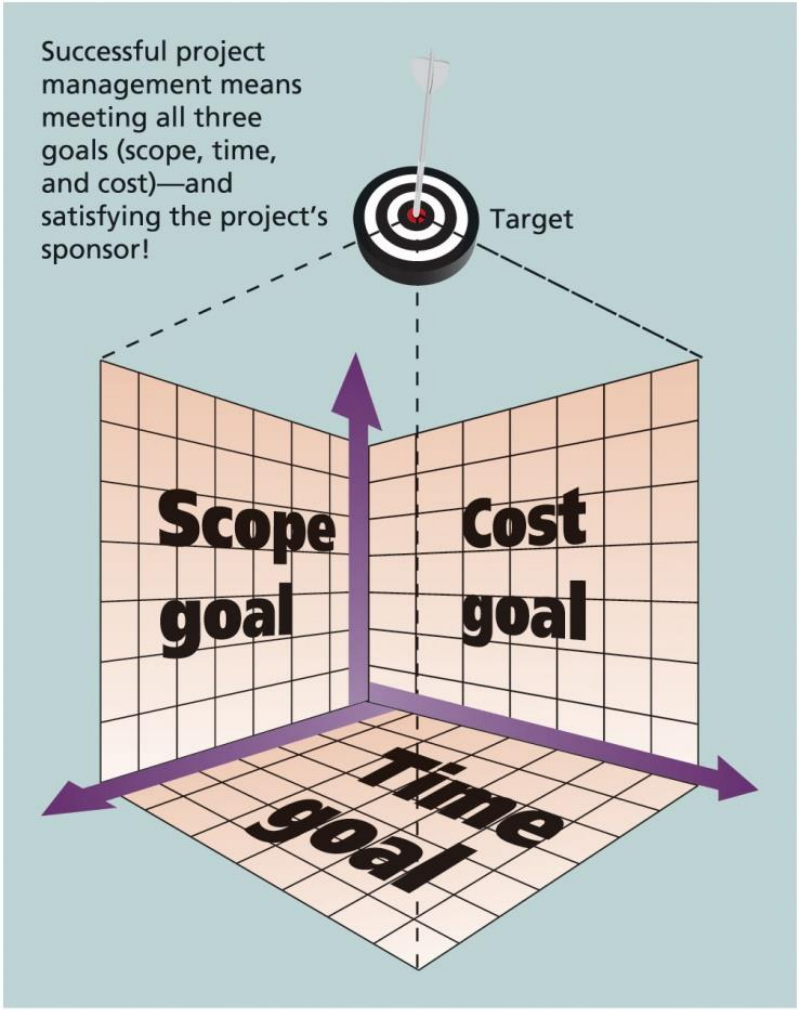
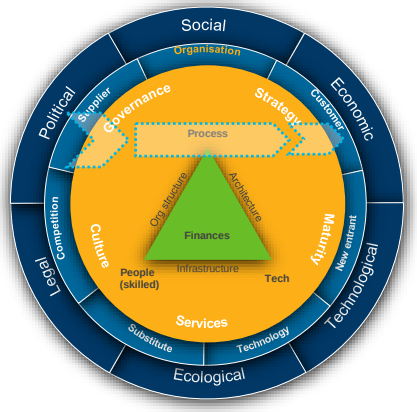


FIGURE 1-1 Project constraints

What is Project Management? (1 of 2)

- Project management is "**the application of knowledge, skills, tools and techniques to project activities to meet project requirements**" (PMBOK® Guide, Sixth Edition, 2017)
- Project managers **strive to meet the triple constraint** (project **scope**, **time**, and **cost** goals) and also facilitate the entire process to **meet the needs** and expectations of project stakeholders



What is Project Management? (2 of 2)

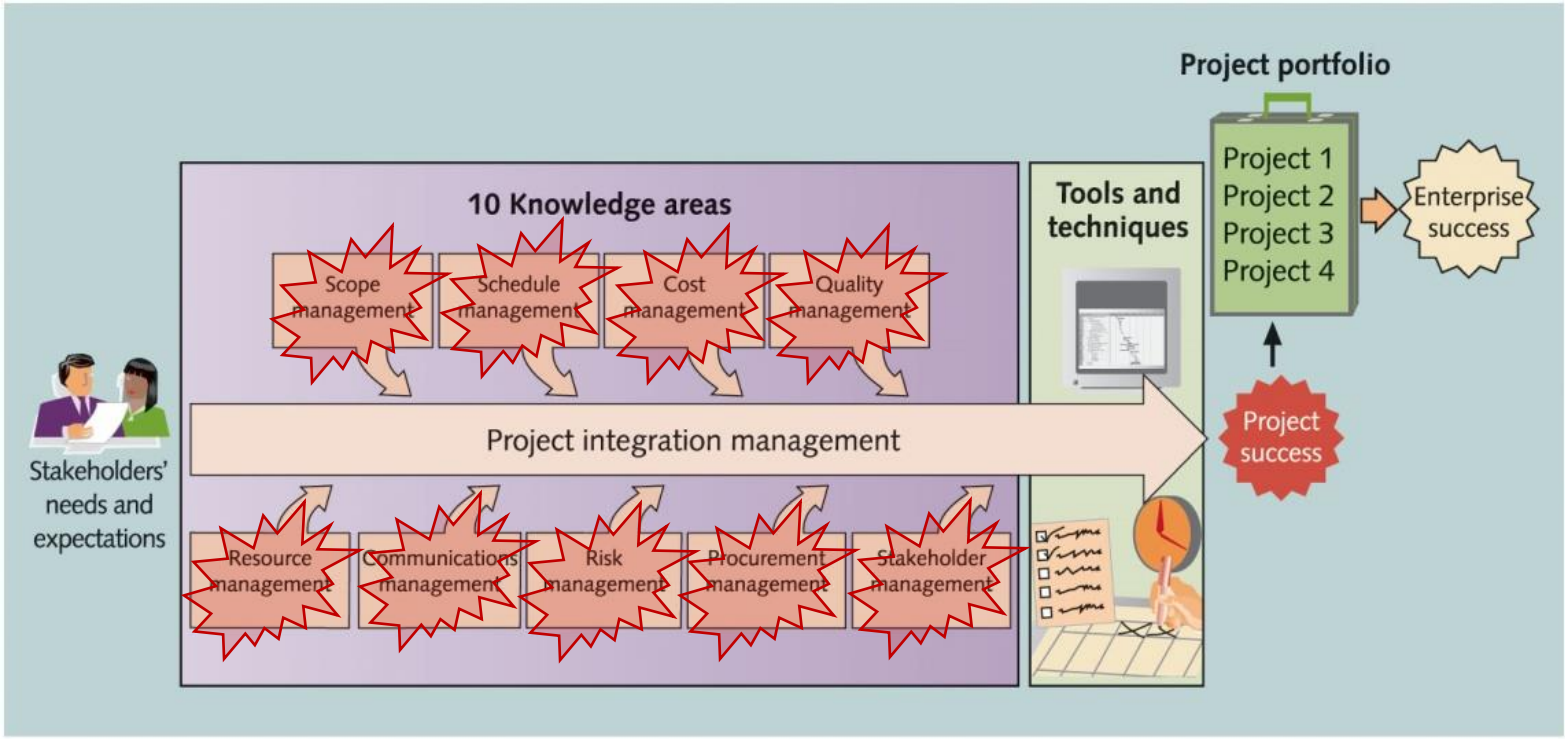


FIGURE 1-2 Project management framework

Project Stakeholders

- **Stakeholders are the people involved** in or affected by project activities
- Stakeholders include
  - the project **sponsor**
  - banks and other financial institutions
  - the **project manager**
  - the **project team**
  - support **staff**
  - **suppliers**
  - **opponents** to the project

Project Management Knowledge Areas

- **Knowledge areas describe the key competencies** that project managers must develop
- Project managers **must have knowledge and skills in all 10 knowledge areas** (scope, schedule, cost, quality, resource, communications, risk, procurement, stakeholder, and project integration management)
- This text includes an entire chapter on each knowledge area

Project Management Tools and Techniques (1 of 2)

- Project management **tools** and **techniques** assist project managers and their teams in various aspects of project management
- Some specific ones include
  - Project **charter**, **scope statement**, and **WBS** (scope)
  - Gantt **charts**, network diagrams, critical path analysis, critical chain scheduling (time)
  - **Cost estimates** and earned value management (cost)
  - See Table 1-1 for many more

Project Management Tools and Techniques (2 of 2)

- PMBOK® Guide – Sixth Edition lists **tools and techniques based on their purpose**:
  - Data gathering
  - Data analysis
  - Data representation
  - Decision making
  - Communication
  - Interpersonal and team skills
  - Ungrouped

What Went Right?

- The Standish Group's CHAOS studies show improvements in the statistics for IT projects:
  - The number of successful projects was 29% in 2015
  - 62% of small projects were successful, 6% of large, 9% of medium, and 21% of moderate size
  - **39% of all agile projects were successful compared to 11% of waterfall projects**

Project Success (1 of 4)

- There are several ways to define **project success**:
  - The project met **scope**, **time**, and **cost** goals
  - The project **satisfied** the customer/sponsor
  - The results of the project **met its main objective**, such as making or saving a certain amount of money, providing a good return on investment, or simply making the sponsors happy

Project Success (2 of 4)

Factors of Success	Points
Executive sponsorship	15
Emotional maturity	15
User involvement	15
Optimization	15
Skilled resources	10
Agile processes	7
Modest execution	6
Project management expertise	5
Clear business objectives	4

Source: The Standish Group, CHAOS Manifesto 2015 (2015)

Table 1-2 What Helps Projects Succeed?

Project Success (3 of 4)

- Top three reasons why federal technology projects succeed
  - Adequate funding
  - Staff expertise
  - Engagement from all stakeholders

Project Success (4 of 4)

- Research findings show that companies that excel in project delivery capability:
  - Use an integrated toolbox
  - Grow project leaders
  - Develop a streamlined project delivery process
  - Measure project health using metrics, like customer satisfaction or return on investment

Program and Project Portfolio Management

- About **one-quarter of the world's gross domestic product** is spent on projects
- Two important concepts that help projects meet enterprise goals:
  - Use of **programs**
  - Project **portfolio management**

Programs

- A program is "a group of **related projects** managed in a coordinated manner to obtain benefits and control not available from managing them individually" (PMBOK® Guide — Sixth Edition, 2017)
- Examples of common programs in the IT field include infrastructure, applications development, and user support
- A **program manager provides leadership and direction for the project managers** heading the projects within the program

Project Portfolio Management (1 of 2)

- As part of project portfolio management, **organizations group and manage projects and programs as a portfolio of investments** that contribute to the entire enterprise's success
- **Portfolio managers** help their organizations make wise investment decisions by helping to select and analyze projects from a strategic perspective

Project Portfolio Management (2 of 2)

FIGURE 1-3 Project management compared to project portfolio management

Best Practice

- A **best practice** is "an optimal way recognized by industry to achieve a stated goal or objective"*
- Robert Butrick suggests that organizations need to follow **basic principles of project management**, including these two mentioned earlier in this chapter:
  - Make sure your **projects are driven by your strategy**. Be able to demonstrate how each project you undertake fits your business strategy, and screen out unwanted projects as soon as possible
  - **Engage your stakeholders**. Ignoring stakeholders often leads to project failure. Be sure to engage stakeholders at all stages of a project, and encourage teamwork and commitment at all times

- *Project Management Institute, Organizational Project Management Maturity Model (OPM3) Knowledge Foundation (2003), p. 13.

Organizational Project Management (1 of 2)

- Organizational project management
  - Framework in which portfolio, program, and project management are integrated with organizational enablers in order to achieve strategic objectives

Organizational Project Management (2 of 2)

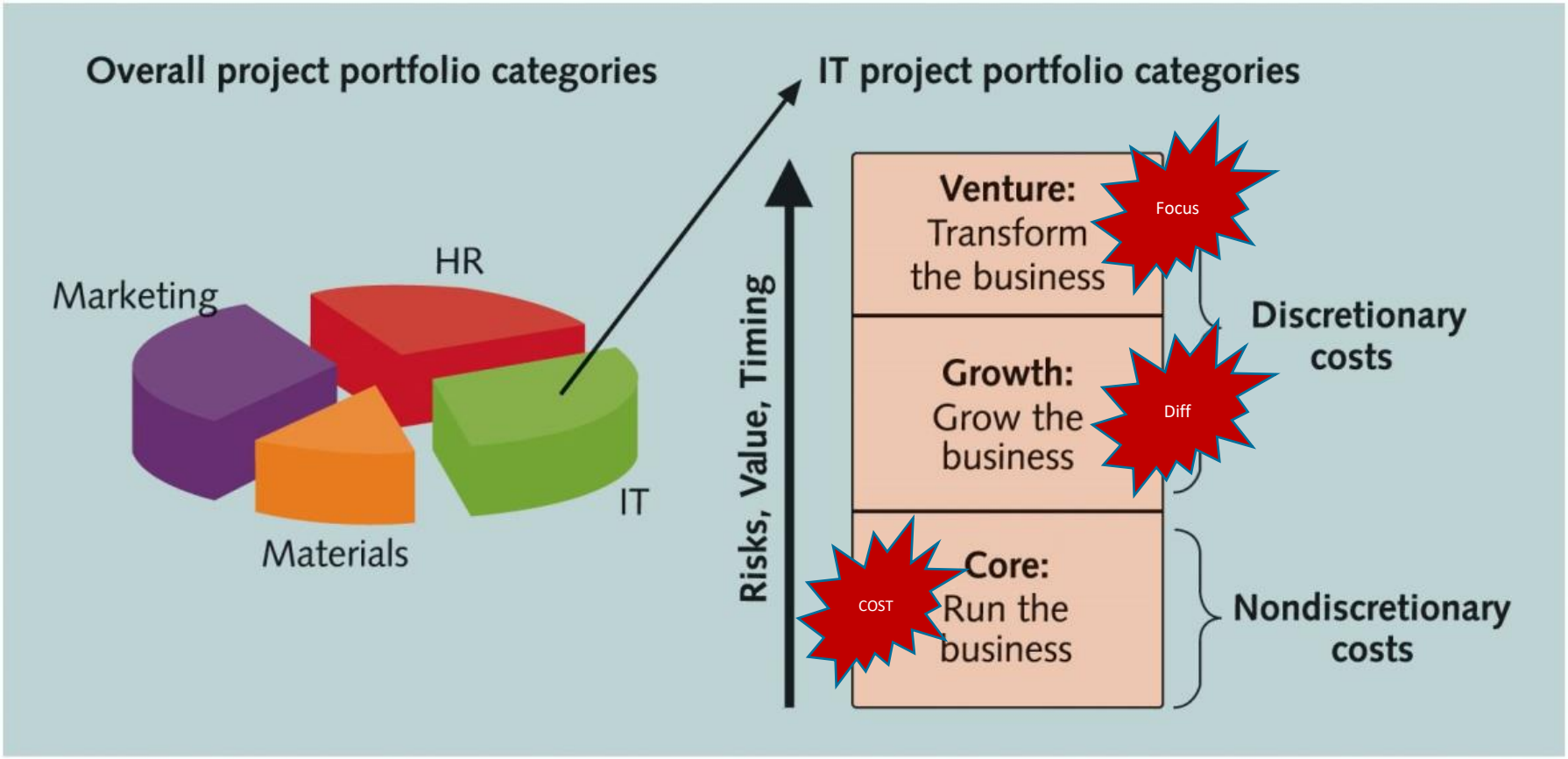


FIGURE 1-4 Sample project portfolio approach

Advice for Young Professionals

- A few **questions to ask yourself to know if you would be a good project manager**
  - Do you **get frustrated by bad bosses**? Do you think you could do a better job?
  - Are you **interested in understanding the big picture** of how organizations work and how your individual work or your project fits in?
  - Have you had other **leadership roles**, such as being a team captain, president of a club, or entrepreneur of a small business? Did you enjoy it? Did others think you did a good job?
  - Are you **good at mentoring others**? Do people ask you for help in developing their skills or your advice on what to do?

Suggested Skills for Project Managers (1 of 2)

- The **Project Management Body of Knowledge**
- Application area knowledge, standards, and regulations
- Project environment knowledge
- General management knowledge and skills
- Soft skills or human relations skills

Suggested Skills for Project Managers (2 of 2)

- Six traits of highly effective project managers as follows:
  - Be a **strategic business partner**
  - Encourage and **recognize valuable contributions**
  - **Respect** and **motivate** stakeholders
  - Be fully vested in success
  - Stress **integrity** and **accountability**
  - **Work in the gray**/Be able to deal with ambiguity

Careers for IT Project Managers (1 of 2)

- In a 2017 survey, IT executives listed the “ten hot tech skills” they planned to hire for in 2017
- **Project management was second only to full-stack software development**
- Even if you choose to stay in a technical role, you still need project management knowledge and skills to help your team and organization

History of Project Management (1 of 4)

- Some people argue that building the Egyptian pyramids was a project, as was building the Great Wall of China
- Most people consider the **Manhattan Project to be the first project** to use "modern" project management
- This three-year, $2 billion (in 1946 dollars) project had a separate project manager and a technical manager

PMI Student Membership

- Students can join PMI at a reduced fee and earn the Certified Associate in Project Management (CAPM) certification(see PMI for details)

Project Management Certification (1 of 2)

- PMI provides certification as a Project Management Professional (PMP®)
- A PMP® has documented sufficient project experience, agreed to follow a code of ethics, and passed the PMP® exam
- The number of people earning PMP® certification is increasing quickly

Ethics in Project Management

- **Ethics, loosely defined, is a set of principles that guide our decision making based on personal values of what is "right" and "wrong"**
- Project managers often face ethical dilemmas
- In order to earn PMP® certification, applicants must agree to PMI's Code of Ethics and Professional Conduct
- Several questions on the PMP® exam are related to professional responsibility, including ethics

Project Management **Software***

- There are hundreds of different products to assist in performing project management
- Three main categories of tools:
  - Low-end tools: Handle single or smaller projects well, cost under $200 per user
  - Midrange tools: Handle multiple projects and users, cost $200-$1,000 per user, Microsoft Project is still the most popular
  - High-end tools: Also called enterprise project management software, often licensed on a per-user basis
- Several free or open-source tools are also available

Chapter Summary

- A project is a **temporary endeavor** undertaken to create a unique product, service, or result
- **Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements**
- A **program is a group of related projects** managed in a coordinated way
- Project portfolio management involves organizing and managing projects and programs as a **portfolio of investments**
- Project managers play a key role in helping projects and organizations succeed
- The project management profession continues to grow and mature

Homework

WEEK	STUDY UNIT	TOPIC
1	1	Introduction to Project Management Project Management in the IT Context
2	2	Project Management Process Groups
3	3	Project Integration Management
4	4	Project Scope Management
5	5	Project Time Management
6	6	Project Cost Management
7	7	Project Quality Management
8	8	Project Human Resources Management
9	9	Project Communication Management
10	10	Project Risk Management
11	11	Project Procurement Management
12	12	Project Stakeholder Management
13	-	Submit Practical Project